# Math Interventions Update

*A Monthly Update for the Latest in Math Interventions*

**December 2012**
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## Introductions

I would like to take this opportunity to introduce myself to all of the Math Intervention Teachers across the state. My name is Pamela Pickens and I am the new Mathematics Intervention Consultant and the state coordinator for the Mathematics Achievement Fund for the Department of Education. In my nine years of classroom experience, I have spent the last four years teaching 5th grade mathematics. In addition to teaching the core instruction to the students, I also planned and organized math intervention groups for all 5th grade students based on formative and summative assessments. I became very passionate about math standards and math instruction that meets the needs of a variety of learners.

Every month you will receive a newsletter containing helpful information and resources. The newsletter will keep you up-to-date on initiatives from the Kentucky Department of Education (KDE) and Kentucky Center for Mathematics (KCM), program requirements, important dates, effective instructional strategies, intervention lessons, legislation updates, math resources, and much more. The newsletter will also contain the latest information and resources from Kentucky Systems of Intervention (KSI). I would like the newsletter to be a useful tool for anyone teaching math, so feel free to pass it along to other teachers in your school or district. If you have any suggestions for topics or resources to include in an upcoming edition, please feel free to contact me. Our best resource is each other.

Thank you for your continued dedication to students and helping them succeed in math by providing effective interventions each and every day. I look forward to working with you this year. Please know that I am here to answer any questions that you may have and assist you at any time.

**Department of Education**

Office of Next-Generation Learners

Division of Learning Services

Differentiated Learning Branch

**Division Director: Johnny Collett**

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**Mathematics Intervention Consultant: Pamela Pickens**

Thank you – Pamela Pickens

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# A Quick Overview of the Mathematics Achievement Fund (MAF)

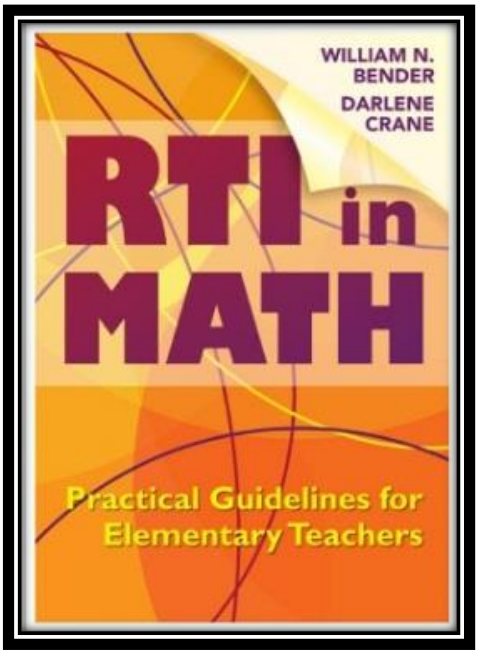
The Mathematics Achievement Fund (MAF) grant provides schools with funds for teacher training (otherwise not provided by the KCM) and implementation of mathematics diagnostic assessment and intervention services and program(s) that address the needs of students in the primary program who are struggling with mathematics.

The diagnostic assessment and intervention services and program(s) should promote effective instructional practices in mathematics. Selected mathematics diagnostic assessment and intervention services and program(s) should be based on data specific to the needs of the identified students that the program(s) will serve.

As specified in KRS 158.844, the mathematics diagnostic assessment and intervention services and program(s) selected must be:

1. provided to a student by a certified teacher with training in mathematics diagnostic assessment and intervention services
2. based on reliable, replicable research; and
3. based on the ongoing assessment of individual student needs.

The mathematics diagnostic assessment and intervention services and program(s) selected by schools will determine the instructional method required for implementation (e.g., one on one, students grouped for the specific purpose of receiving appropriate intervention services).
The fiscal agent for the application for public schools must be a local school district.




## Recommended Reading

*RTI in Math: Pratical Guidelines for Elementary Teachers*
by William N. Bender and Darlene Crane (Aug 15, 2010)

RTI in Math: Practical Guidelines for Elementary Teachers addresses a growing demand for implementation of response to intervention (RTI) procedures in mathematics education. They analyze common student difficulties in both early and upper-elementary math, from basic number sense to complex problem-solving skills, and they apply a three-tier RTI model to the general education classroom. This resource offers guidance through each stage of the RTI process, extensive tools for teacher reflection and growth, and discussion of support strategies beyond the classroom. It also includes a variety of assessment materials, research-based instructional strategies, and numerous case-studies of RTI implementation.

# Mathematical Practice of the Month

To emphasize the Mathematical Practices, the CCSS gives them their own distinct section, but they are not to be thought of as a separate skill set to be handled in special lessons or supplements. The intent is that these *essential mathematical habits of mind and action* pervade the curriculum and pedagogy of mathematics, K–12, in age-appropriate ways.

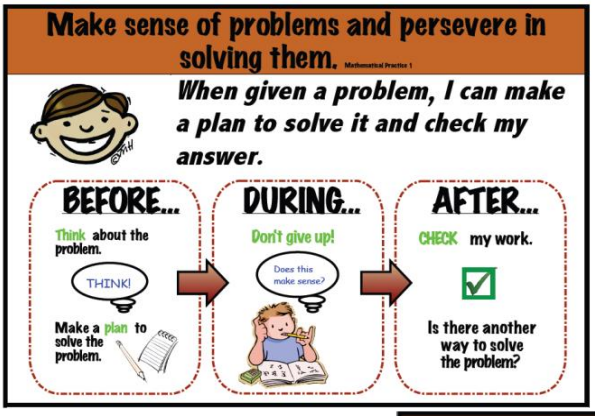
## 1 - Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

*Resource: Common Core State Standards Initiative* [http://www.corestandards.org/](http://www.corestandards.org/)

## Anchor Charts for this Mathematical Practice

*Resource: Jordan School District* [http://elemmath.jordandistrict.org/files/2012/05/Standard-11.pdf](http://elemmath.jordandistrict.org/files/2012/05/Standard-11.pdf)




Left – K-1

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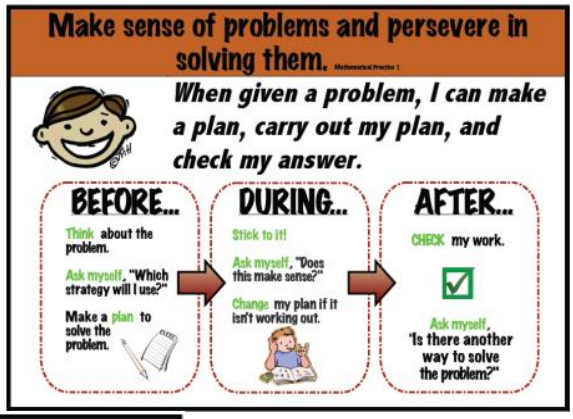


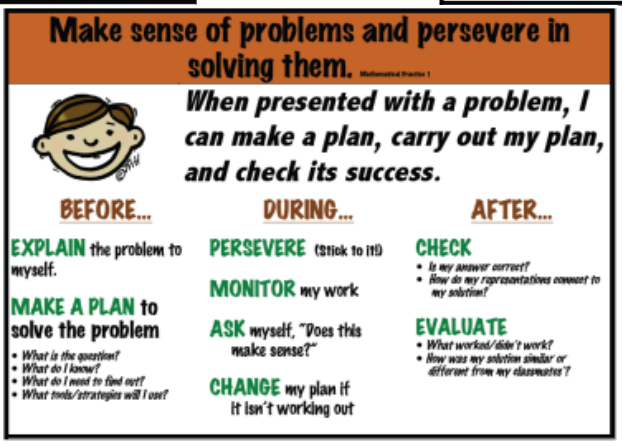

# Spotlight on CIITS

**What is CIITS?**

CIITS stands for the Continuous Instructional Improvement Technology System – a tool designed to pull standards, instructional materials, lesson plans, assessments, data and professional development all together into an integrated online resource. CIITS is a one-stop shop that provides Kentucky educators with the resources aligned to standards that support highly effective teaching and learning in their classrooms, schools and districts.

**Featured Link this Month: HippoCampus**

HippoCampus is a fabulous site available for all teachers through a link on CIITS. HippoCampus provides presentations, video clips, worked examples, the Khan Academy Collection, simulations, and tutoring sessions. The site has a wide variety of resources for developmental math including topics related to whole numbers, fractions, decimals, measurement and much more. The site is also available to parents, tutors and students for use at home to support the instruction at school. If you haven't had a chance to check out HippoCampus, please take a quick moment to explore another great bank of resources.

## Dates to Remember


**December 7th** – Deadline for 2013 Conference Speaker Proposals

**January 18th** – Poster Submissions Due (optional for all MITs)

**January 25th** – Midyear Data and DOR submission deadline – send files to mitdata@nku.edu (All MITs)

**February 25th - 26th** – Annual KCM Conference

## School-Wide Strategies for Managing Mathematics

**Applied Problems: Encourage Students to Draw to Clarify Understanding** (Van Essen & Hamaker, 1990; Van Garderen, 2006). Making a drawing of an applied, or 'word', problem is one easy heuristic tool that students can use to help them to find the solution. An additional benefit of the drawing strategy is that it can reveal to the teacher any student misunderstandings about how to set up or solve the word problem. To introduce students to the drawing strategy, the teacher hands out a worksheet containing at least six word problems. The teacher explains to students that making a picture of a word problem sometimes makes that problem clearer and easier to solve. The teacher and students then independently create drawings of each of the problems on the worksheet. Next, the students show their drawings for each problem, explaining each drawing and how it relates to the word problem. The teacher also participates, explaining his or her drawings to the class or group. Then students are directed independently to make drawings as an intermediate problem-solving step when they are faced with challenging word problems.

Article Excerpt from *Intervention Central*. Read the entire the article at
http://www.interventioncentral.org/academic-interventions/math/school-wide-strategies-managing-mathematics

# Wonderful Websites

- **Intervention Central** - Provides teachers, schools and districts with free resources to help struggling learners and implement Response to Intervention and attain the Common Core State Standards http://www.interventioncentral.org/academic-interventions/math

- **Mathwire** - This series of pages is designed as a resource to teachers as they differentiate instruction for varied learners in the class. Suggested activities include multi-sensory approaches to various mathematical skills and games to help struggling students construct deep meaning for numbers. http://mathwire.com/strategies/intervention.html

- **Illuminations: Resources for Teaching Math** – The National Council of Teachers of Mathematics provides an outstanding amount of math resources, including activities, lessons, standards, and web links. http://illuminations.nctm.org/